

# Electromagnetic Field Communications System for Wireless Networks

## ABSTRACT OF THE DISCLOSURE

*An Electromagnetic Field Communications System for Wireless Networks* for producing an electromagnetic field within a structure is disclosed. The electromagnetic field is produced by using common conductive elements already present within virtually all pre-existing residential commercial, industrial buildings. These conductors, which may include electrical ground shields, wiring, pipes, sprinkler conduits or structural members, are excited with a signal, and become the cavity which contains the electromagnetic field. In preferred embodiments of the invention, signals are generated using the High Frequency, Very High Frequency and lower UHF bands (3 to 30, 30 to 300 and up to 400 MHz). The invention may be used to create a local area network inside the field and within the structure. Devices that include receivers tuned to the electromagnetic field may then be connected and networked. The system may be operated without causing interference to other conventional radio devices outside the structure in the HF band.